

**Department of Environmental Health  
College of Public Health  
University of Georgia**

**EHSC 8220(4 credit hours)  
PBPK Modeling  
Fall, 2009**

**Course Information**

Instructor: Jeffrey Fisher  
Office Location: Room 152, Environ. Health Sci. Bldg.  
Phone: 706-542-1001  
Email: jwfisher@uga.edu  
Office Hours: 1 hour before each class

**Course Meeting Time and Location**

Building: Environmental Health Science Building  
Room: Rowe Room (near dept office)  
Day: Monday and Wednesday  
Time: Lecture 9-11 Monday and Wednesday, Lab work on your own schedule

**Textbooks and Other Required Course Material**

*No text books, documents and links locations on the web.*

**Course Description**

The **GOAL** of this class is to prepare a student to use PBPK modeling as a tool for dose-response assessment, risk assessment or asking research questions about a chemical or material. The textbook is: 'Physiologically Based Pharmacokinetic Modeling, Science and Applications (in book store)'. Information will be conveyed from the textbook, lectures and hands-on computer simulations. The **expected outcome** is to be capable of developing a PBPK model and working independently with some oversight by an experienced PBPK modeler.

**Course Learning Objectives**

*Learning objectives:* Learn how environmental contaminants distribute in the body, how to conduct dosimetry based analyses, construct model code and run simulations with acslX software. Perform risk analyses using acslX simulations.

**Course Requirements for Grading Purposes**

Students will complete a PBPK model for a chemical of their selection and present their findings to the class.

**Topical Outline**

<b>Date</b>	<b>Topic</b>	<b>Primary Instructor</b>	<b>Activity</b>
8/18	Class expectations, Location of Information	Fisher	lecture
8/19	Introduction to PBPK Models	Fisher	lecture
8/24	Physiology	Fisher	lecture
8/26	Math	Fisher	lecture
8/31	Writing equations/software	Fisher	Lecture,lab
9/2	Software, model code	Fisher	Lecture,lab
9/7	No class		
9/9	Selecting your drug or chemical	Fisher	Lecture,lab
9/14	Model structure, scaling	Fisher	lab
9/16	Routes of Exposure	Fisher	lab
9/21	Attributes of Models	Fisher	lecture, lab
9/23	Evaluation of Literature	Fisher	lecture
9/28	Evaluation of Literature	Fisher	lecture, lab
9/30	Status of modeling projects	Grad Students	Student led
10/5	Exposure Assessment, Advanced	Fisher	lecture
10/7	Writing Code	Fisher	lecture
10/12	Writing Code	Fisher	lecture
10/14	Invited Speaker	Guest	lecture
10/19	Invited Speaker	Guest	lecture
10/21	Simulation, ODE solvers	Fisher	lecture
10/26	Project—problem solving		Open Discussion
10/28	Project code evaluation	Fisher	Open Discussion
11/2	Project code evaluation	Fisher	Student Guided Discussion
11/4	Programming	Fisher	Student Guided Discussion
11/9	Programming	Fisher	Student Guided Discussion
11/11	Dose Response	Fisher/Invited Guest?	Discussion
11/16	Critical Thinking	Fisher	Lecture,lab
11/18	Technical Issues for Final Project	Fisher/Team	Discussion
11/23	THANKSGIVING, NO CLASS		
11/25	THANKSGIVING, NO CLASS		
11/30	Project Final Simulations	Fisher	
12/2	Project Talk	Fisher	Student Presentations
12/7	Project Talk	Fisher	Student Presentations

\*Schedule is subject to change. Students will be notified of changes as far in advance as possible

**Grading Policy**

A= 90% and above, B=80% and above, C=70% and above. Plus grading will be used.

### **Make-Up Policy**

*Instructor must be notified in advance if missing graded work. Emergency situations will be dealt with on a case by case basis.*

### **Attendance Policy**

Attendance is expected for all class periods. Participation in the class is expected.

### **University Honor Code and Academic Honesty Policy**

*All academic work must meet the standards contained in “A Culture of Honesty.” All students are responsible to inform themselves about those standards before performing any academic work.*

### **Students with Disabilities**

Students with disabilities who require reasonable accommodations in order to participate in course activities or meet course requirements should contact the instructor or designate during regular office hours or by appointment.

### **General Disclaimers**

*The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.*